

REMARKS

By the present amendment, claim 1 has been amended to incorporate therein the subject matter of claim 24, and claims 2-3, 11, and 24 have been canceled. Also, claim 13 has been amended to correct an immediate typographical error.

It is submitted that the amendments do not raise any new issues and only incorporate a dependent claim, delete claims, and correct an immediate typographical error in claim 13. Accordingly, entry and consideration of the amendments is respectfully requested.

Claims 1, 4, 9-10, 12-17, 23 and 25-39 are pending in the present application. Claims 1 and 25 are the only independent claims.

Art rejections

Claim 1 and dependent claims

In the Office Action, the following rejections are set forth with respect to independent claim 1 and the claims dependent directly or indirectly thereon:

- Claims 1-2, 4, 9-10, 12, 14-16, and 19-24 are rejected under 35 U.S.C. 102(b) as anticipated by US 5,565,276 to Murakami et al. (“Murakami”).
- Claim 3 is rejected under 35 U.S.C. 103(a) as obvious over Murakami.
- Claim 11 is rejected under 35 U.S.C. 103(a) as obvious over Murakami in view of Rausing and further in view of “Nordic Pulp and Paper Research”.
- Claim 13 is rejected under 35 U.S.C. 103(a) as obvious over Murakami in view of Rausing and further in view of US 3,880,706 to Williams (“Williams”).

- Claim 17 is rejected under 35 U.S.C. 103(a) as obvious over Murakami in view of Rausing and further in view of US 6,491,324 to Schmitz et al. ("Schmitz").

Reconsideration and withdrawal of the rejections is respectfully requested.

Murakami lists various additives for its substrate paper including "a dye, a pigment, etc." (col. 5, lines 44-45). However, Murakami is silent regarding using different authentication elements in a first and in a second ply. In particular, in the Office Action, reference is made to col. 11, lines 17-19 and Fig. 5 as containing an alleged disclosure that the nacreous fragments of the "second ply" 10 are absent from the "first ply" 20. However, no explanation has been given regarding why or how the pigment or dye of the "first ply" 20 could be absent from the "second ply" 10, as required by claim 24 (now incorporated into claim 1).

More specifically, it is submitted that the person of ordinary skill in the art would have read Murakami as teaching the use of the same types of dyes or pigments of col. 5, lines 45-46 of Murakami in both layers 10 and 20 of Fig. 5 of Murakami. In particular, the person of the art would understand that Murakami uses the same paper stock for both layers 10 and 20 because Murakami manufactures the two-ply paper of Fig. 5 by using "the combination of a tanmo machine and a cylinder machine or the combination of the cylinder machines" (col. 6, lines 64-65).

Namely, there are two basic ways to produce a multi layered paper:

- 'laminated paper': production of paper layers, each layer being produced on a specific paper machine or the paper layers being produced successively, then they are laminated (gluing), or

- ‘multiply paper’: production of paper layers simultaneously and on one paper machine comprising several ‘wet ends’ (the first part of the paper machine, where the fiber suspension is drained to form a wet fibrous sheet) that could be ‘tamno’, ‘cylinder mould’, ‘Fourdrinier’, the paper layers are then wet-assembled, pressed and dried to form a multiply paper.

Thus, regarding a combination of paper machines (see Fig.5, col. 6, lines 64-65, example 7, col. 11, line 16), Murakami describes a paper machine comprising several forming parts and producing a ‘multiply paper’. These ‘combination machines’ are generally provided with a single ‘pulp circuit’ feeding the different ‘wet ends’ with the same fiber suspension (diluted pulp).

Thus, regarding Fig. 5 and example 7 of Murakami, the person of the art would understand that the starting paper stock is divided in two ‘flows’, and then only one of them being provided with the nacreous flakes. Accordingly, Murakami uses a same paper stock for both layers.

In contrast, in the presently claimed invention as recited in present claim 1, not only (i) the first authentication element of the first ply is substantially absent from the second ply, but also (ii) the second authentication element of the second ply is substantially absent from the first ply.

An advantage of the presently claimed invention is that it is possible to use two different security elements, each security element being provided in only one ply. The feature of the presently claimed invention is not taught nor suggested by Murakami, which focuses on the use

of a single authentication particle (nacreous flakes) in only one layer. Further, the other cited references fail to remedy the deficiencies of Murakami. Therefore, present claim 1, and the claims dependent directly or indirectly thereon, are not anticipated by Murakami, and not obvious over Murakami taken alone or in any combination.

In addition, with respect to each of the dependent claims, it is submitted that the cited references taken alone or in any combination fail to teach or suggest the combined features of each of these respective claims. Therefore, each of the dependent claims is not obvious over the cited references taken alone or in any combination.

In view of the above, it is submitted that the rejection of claim 1 and the claims dependent directly or indirectly thereon should be withdrawn.

Claim 25 and dependent claims

In the Office Action, the following rejections are set forth with respect to independent claim 25 and the claims dependent directly or indirectly thereon:

- Claims 25-30, 33 and 35 are rejected under 35 U.S.C. 103(a) as obvious over US 6,402,888 to Doublet et al. ("Doublet") in view of Murakami.
- Claims 31 and 34 are rejected under 35 U.S.C. 103(a) as obvious over US 6,402,888 to Doublet et al. ("Doublet") in view of Williams.
- Claim 32 is rejected under 35 U.S.C. 103(a) as obvious over Doublet in view of Murakami and further in view of "Nordic Pulp and Paper Research".

It is alleged in the Office Action that Murakami discloses colored particles in each ply (see Office Action at pages 2 and 9):

- substrate paper 20 (Fig. 5) containing pigments (col. 5, lines 36-46) allegedly corresponds to a “first ply” of the invention;
- substrate paper 10 (Fig. 5) containing nacreous pigment particles (col. 4, lines 44-45) allegedly corresponds to a “second ply” of the invention.

Further, Doublet is cited as disclosing a banknote paper with a first ply 5 having a watermark of non-zero thickness and a second ply 3, and it is alleged that Murakami discloses using strengthening agents such as polyamide, so that it would have been obvious to use polyamide fibers in the second ply 3 of Doublet to strengthen the paper ply (see Office Action at page 6).

Reconsideration and withdrawal of the rejections is respectfully requested.

It is submitted that a person of ordinary skill in the art would have used the same types of reinforcement fibers of Murakami in both layers 3 and 5 of Doublet for at least the following reasons:

- it is easier to provide the ‘wet ends’ of a combination of machines with a unique paper stock (the reinforcement fibers and the cellulosic are mixed simultaneously in water so no specific point of introduction is needed for the reinforcement fibers), and
- in order to reinforce simultaneously the two layers of the paper, and thus, the whole multiply paper).

Namely, advantages of using a same paper stock are apparent based on the disclosure of Murakami, especially the use of the combination machines, as discussed above with respect to claim 1. Doublet is silent on this point, and no different paper stock is needed in the case of

Doublet, so Doublet does not need to describe the paper stock. Moreover, no difference can be seen on Fig.1, and also on Fig.2 to Fig.4 of Doublet, but the hatching indicates that layers (3) and (5) are produced on different wet ends then wet assembled. Further, the other references are also silent on this point.

In summary, Murakami provides strong incentive and motivation to use a same paper stock, as discussed above, and no contrary incentive is provided in Doublet or any of the other cited references.

In contrast, the Applicant has found that reinforcement fibers degrade the quality and the rendition of an authentication element such as a watermark (see present specification at paragraphs 0028 and 0034). Accordingly, in the presently claimed invention as recited in present claim 25, not only (i) the first authentication element of the first ply, which is a watermark, is substantially absent from the other ply, but also (ii) the reinforcing element in the second ply is substantially absent from the first ply. An advantage of this feature is that the reinforcing fibers do not reduce the quality of the watermark. This feature of the presently claimed invention and its advantages are not taught or suggested in any of the cited references. Therefore, claim 25 and the claims dependent directly or indirectly thereon are not obvious over the cited references taken alone or in any combination.

In addition, with respect to each of the dependent claims, it is submitted that the cited references taken alone or in any combination fail to teach or suggest the combined features of each of these respective claims. Therefore, each of the dependent claims is not obvious over the cited references taken alone or in any combination.

In view of the above, it is submitted that the rejection of claim 1 and the claims dependent directly or indirectly thereon should be withdrawn.

Conclusion

In conclusion, the invention as presently claimed is patentable. It is believed that the claims are in allowable condition and a notice to that effect is earnestly requested.

If there is, in the Examiner's opinion, any outstanding issue and such issue may be resolved by means of a telephone interview, the Examiner is respectfully requested to contact the undersigned attorney at the telephone number listed below.

If this paper is not considered to be timely filed, the Applicants hereby petition for an appropriate extension of the response period. Please charge the fee for such extension and any other fees which may be required to Deposit Account No. 50-2866.

Respectfully submitted,
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